

PATENT CLAIMS

1. A three-dimensional joint structure, made of two hollow profiles (1, 2), of a support frame for vehicles, in which the first hollow profile (1) has at least one planar side and is cut through around its circumference in one single plane except for a web (1c) lying in the planar side and is bent around this web (1c), and the second hollow profile (2) has at least two directly neighboring planar sides, which press against the ends (1a, 1b) of the first hollow profile (1) facing toward one another, which result through the cutting and bending, the two hollow profiles (1, 2) being integrally joined to one another at the edge regions (1d, 1e, 1f) of the first hollow profile.
2. The joint structure according to Claim 1, characterized in that the contours of the two hollow profiles (1, 2) press against one another without gaps.
3. The joint structure according to Claim 1 or 2, characterized in that the first hollow profile (1) has projecting edge regions (1d, 1e, 1f) on its ends facing toward one another (1a, 1b), which press against the second hollow profile (2).
4. The joint structure according to one of Claims 1 through 3,

characterized in that, in the region of the edges of the first hollow profile (1), quadrilateral cutouts (1g), curved corresponding to the edge radius, which extend along the separating cut over the entire edge radius, are cut out symmetrically to the separating cut.

5. The joint structure according to Claim 4,

characterized in that the cut-out cutouts (1g) have rounded corners.

6. A method for manufacturing a joint structure according to Claim 1,

characterized by the following method steps:

- a) cutting through a first hollow profile (1) having at least one planar side around its circumference in one single plane except for a web (1c) lying in the planar side,
- b) bending the first, partially cut-through hollow profile (1) around the web lying in the planar side,
- c) placing the two planar sides (2a, 2b) of a second hollow profile (2), which has two directly neighboring planar sides, on the ends (1a, 1b) of the first hollow profile (1) facing toward one another, which result through the cutting and bending, and
- d) integrally joining the second hollow profile (2) to the first hollow profile (1) at these edge regions (1d, 1e, 1f).

7. The method according to Claim 6,  
  
characterized in that, before the cutting, the first hollow profile (1) is deformed around its circumference except for a web (1c) lying in the planar surface and the separating cut is laid through the middle of the deformation (1x).
8. The method according to Claim 7,  
  
characterized in that the deformation (1x) is introduced into the first hollow profile (1) through hydroforming.
9. The method according to Claim 6,  
  
characterized in that the first hollow profile (1) is cut through laser beam cutting.
10. The method according Claim 6,  
  
characterized in that the hollow profiles (1, 2) are joined by welding or soldering.
11. The method according Claim 10,  
  
characterized in that the welding or soldering is performed using laser beams.